

Work Order ID 88747

88747

Page 1

August-01-12 12:31:26 PM

Item ID: D407-667-105

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Crosstube Fwd

Start Date: 8/01/12 Start Qty: 1.00

1

Required Date: 8/06/12 Req'd Qty: 1.00

1

Reference: REWORK DSI 9544

Cust Item ID:

Customer:

| | | | |
|--|--------------------|---------------------|-----------|
| DART Dart Aerospace Ltd. 270 ABERDEEN ST HAWKESBURY ONT CANADA K6A 1K7 | | TEL: 1-613-632-5200 | |
| P/N | D407-667-105 | CHG | CHG004 |
| DESC. | Crosstube Fwd High | STC | SH01-5 |
| LOT | B82729 | STC | SR01304NY |
| MODEL | Bell 407 | STC | |

Approvals: Process Plan: *W*

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

MADE IN CANADA

Stop

NR2

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|--------------|--------------|
| D407-667-145 | Rev C (DEO) |
| DSI9565 | A |

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D407-667-105 CHG004

230

0.00

230

Crosstubes

Crosstubes

Memo

0.00

Crosstubes

PULL FROM STOCK:

1 X D407-667-105 B82729

(KEEP KIT IN BOX TO REPACKAGE AFTER REWORK)

REOWRK PER DSI 9544

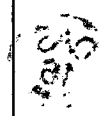
AS 12-8-2

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | |
|--|-------------|-------------|---|---|--|---|------------------------|---------------------|--|--|---|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | |
| Doc/Data <input type="checkbox"/> | | | | |  | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge | | <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | |

Work Order ID 88747

88747

Page 2

August-01-12 12:31:26 PM

Item ID: D407-667-105

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Crosstube Fwd

Start Date: 8/01/12 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 8/06/12 Req'd Qty: 1.00 ***1***

Customer:

Reference: REWORK DSI 9544

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 240 | QC5- Inspect part completeness to step on W/O | 0.00 | | | | | | | |
| *240* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |
| 250 | Pick Kit | 0.00 | | | | | | | |
| *250* | | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | ENSURE ORIGINAL KIT IS IN BOX | | | | | | | | |
| 260 | QC4- 100% Inspect kits for completeness | 0.00 | | | | | | | |
| *260* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

DAS 16
8-57
Dobson

12/08/04
Pto →
12/8/20

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|---|---------|-------|-----|---|-------------------------------------|---|--------------|--------------|------------------------|--|--|
| Work Order: _____ Part No. _____ NCR No. <u>12-1695</u> | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | 12/8/16 | # 760 | x1 | Found when inspection DSZ 9565 (D706-667-017) | DAS 16 9-8 057042 12/08/16 | Rework correctly to per DSZ 9565 (D706-667-017) <div style="text-align: right;">J</div> | AS 12-8-3 | 12-08-24 | 057042 12/08/16 | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input checked="" type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |

| FAULT CATEGORY | | | |
|--|---|---|---|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |

Work Order ID 88747

88747

Page 3

August-01-12 12:31:26 PM

Item ID: D407-667-105 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Crosstube Fwd
 Start Date: 8/01/12 Start Qty: 1.00 ***1*** Cust Item ID:
 Required Date: 8/06/12 Req'd Qty: 1.00 ***1*** Customer:
 Reference: REWORK DSI 9544

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--------------------------------|---|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 270 | | 0.00 | | | | | | | |
| *270* | Packaging | | | | | | | | |
| Packaging | Memo | 0.00 | | | | | | | |
| Packaging | REPACKAGE PER PPP USING NEW B/N NEW LABELS REQ'D. ADD DSI 9544 TO PAPERWORK Identify and pack for shipping as per PPP D407-667-105 Location: <u>63</u> PPP Rev: _____ | | | | | | | | |
| 280 | QC21- Final Inspection - Work Order Release | 0.00 | | | | | | | |
| *280* | | | | | | | | | |
| QC | Memo | 0.00 | | | | | | | |
| Quality Control | | | | | | | | | |

CK 12/6/28 -
 MF
 1208'27

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | | |
|---|------|------|---|---|-------------------|---|-------------|--------------|---|--|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge _____ _____ _____ | | <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____ | |

Picklist Print

August-01-12 12:31:26 PM

Page 1

Work-Order ID: 88747

Parent Item: D407-667-105

Start Date: 8/01/12

Required Date: 8/06/12

Parent Item Name: Crosstube Fwd

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:F 05.09.01Add holes for compatibility with Bell SkidtubesKJ/JLM
 IPP Rev:G 08-05-16 chg QC6 to QC15 DD verified by:EC
 IPP Rev:H 08-06-03 update as per DS19415 (ECN1198) DD verified by:ec
 IPP Rev:I 08-07-14 add (scribe inside of tube) seq.6 DD verified by:EC
 IPP Rev:J 08-07-28 update as per (par 08-013) DD verified by:EC
 IPP Rev K 09.01.06 ECN 08-562 EC verified by:DD IPP REV:L 11.08.05 PER ECN 11-615 DD VERF:EC

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D206-667-017 Grounding Strap Installation | (DS19544) | Manufactured | No | 88731 | | | Each | 0.0000 | | ① | AS | 12-8-2 | |
| D407-667-105 Crosstube Fwd | | Manufactured | No | 82729 | | | Each | 1.0000 | | ① | AD | 12-8-2 | |
| | | | | <u>Location</u> | | <u>Loc Qty</u> | <u>Loc Code</u> | | | | | | |
| | | | | FG | | 1 | | | | | | | |
| | | | | 79842 | | 1 | | | | | | | |

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|---|-------------|-------------|---|---|--------------------------|---|------------------------|---------------------|---|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | |
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | | | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | | | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | | | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | | |

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D206-667 REV. C AND EARLIER AND
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D206-667 REV. 2 AND EARLIER

REF: CANADIAN STC: SH01-5
REF: FAA STC: SR01304NY
REF: EASA STC: EASA.IM.R.S.01179

PURPOSE

The purpose of this service instruction is to add the optional D206-667-017 Kit and provide guidelines to install extra clamps on D206-667-101/-103 or D407-667-105 forward crosstubes to allow fastening of OEM grounding straps.

INSTRUCTIONS:

- 1) If installed, follow Section 32.1 of ICA-D206-667 for removal of the forward crosstube from the helicopter.
- 2) Locate AN742D36 Clamp as shown in Figure 1 of this service instruction and mark location of clamp on the crosstube.
- 3) Remove crosstube finish (paint and primer) in area where AN742D36 Clamp will be installed and touch up affected area with chemical film material (Alodine 1200 or 1201) per MIL-C-5541.
- 4) Install AN742D36 Clamp complete with MS9165-05 per Section A-A of Figure 1 of this service instruction.
- 5) Touch up paint as required per Item 5.3.3 of ICA-D206-667.
- 6) Seal edges where AN742D36 Clamp meets with crosstube using Sikaflex-241/291 or MIL-S-8802 Class B2 or Proseal 890 sealant.
- 7) Install/re-install forward crosstube in accordance with Section 32.2 of ICA-D206-667.
- 8) Fasten OEM grounding strap to MS9165-05 Angle Bracket on forward crosstube per Bell instructions.
- 9) Undertake a resistance check between a ground point on the skidtube and aircraft ground in accordance with Class R-II requirement per BHT-ELEC-SPM. Maximum resistance is 10 milliohms (mΩ).

PARTS LIST:

| QTY -017 | PART NUMBER | DESCRIPTION |
|-------------|---------------|------------------------------|
| X | D206-667-017 | GROUNDING STRAP INSTALLATION |
| 2 | AN742D36 | CLAMP |
| 2 | MS9165-05 | ANGLE BRACKET |
| 2 | MS21042-3 | NUT |
| 2 | MS27039-1-08 | SCREW |
| 4 | NAS1149C0332R | WASHER |

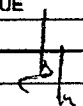




WEIGHT AND BALANCE

There is a negligible weight change associated with the installation of this kit.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED
BY: 
D. SHEPHERD (DE # 02)

DATE: 11.02.25
CERT. NO.: SH01-5
ISSUE NO.: 3

| | | | |
|------------|---|--|--------------|
| A | NEW ISSUE | MB | 11.02.18 |
| REV. | DESCRIPTION | BY | DATE |
| DESIGN |  | DART AEROSPACE LTD | |
| DRAWN |  | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED |  | DRAWING NO. | REV. A |
| MFG. APPR. | N/A | DSI 9544 | SHEET 1 OF 2 |
| APPROVED |  | TITLE | SCALE |
| DE APPR. |  | GROUNDING STRAP INSTALLATION | NTS |
| DATE | 11.02.18 | COPYRIGHT © 2011 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | |

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|--------------------------|------|------|---|---|---|--------------------|-------------|--------------|--------------|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | |
| Doc/Data | <input type="checkbox"/> | | | | | | | | | | |
| Equip/Tooling | <input type="checkbox"/> | | | | | | | | | | |
| Operator | <input type="checkbox"/> | | | | | | | | | | |
| Material | <input type="checkbox"/> | | | | | | | | | | |
| Setup | <input type="checkbox"/> | | | | | | | | | | |
| Other | <input type="checkbox"/> | | | | | | | | | | |
| Process | <input type="checkbox"/> | | | | | | | | | | |
| Supplier | <input type="checkbox"/> | | | | | | | | | | |
| Training | <input type="checkbox"/> | | | | | | | | | | |
| Unapproved | <input type="checkbox"/> | | | | | | | | | | |

| FAULT CATEGORY | | | | |
|---|---|---|---|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other | |

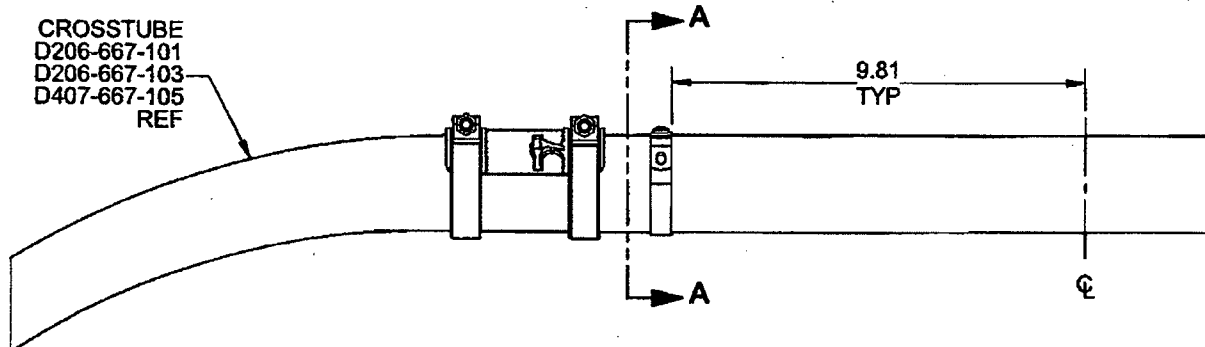
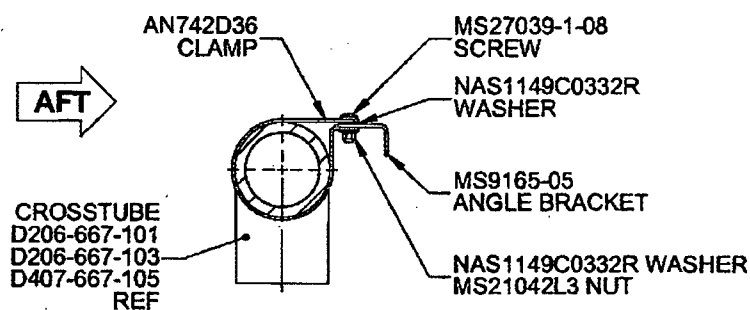


FIGURE 1 - GROUNDING STRAP INSTALLATION
(VIEW LOOKING FWD)








SECTION A-A
(SUPPORT, CLAMP, CUSHION NOT SHOWN FOR CLARITY)
TYP, 2 PL PER CROSSTUBE

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO #01-O-01

APPROVED
BY: *[Signature]*
D. SHEPHERD (DE #02)

DATE: 11.02.25
CERT. NO.: SH01-5
ISSUE NO.: 3

| | | | |
|--|---|--|--------------|
| DESIGN |  | DART AEROSPACE LTD | |
| DRAWN |  | HAWKESBURY, ONTARIO, CANADA | |
| CHECKED |  | DRAWING NO. | REV. A |
| MFG. APPR. | N/A | DSI 9544 | SHEET 2 OF 2 |
| APPROVED |  | TITLE | SCALE |
| DE APPR. |  | GROUNDING STRAP INSTALLATION | NTS |
| DATE | 11.02.18 | COPYRIGHT © 2011 BY DART AEROSPACE LTD | |
| THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | | | |

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|------|------|-----|---|-------------------|---|-------------|--------------|--------------|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data <input type="checkbox"/> | | | | | | | | | | | |
| Equip/Tooling <input type="checkbox"/> | | | | | | | | | | | |
| Operator <input type="checkbox"/> | | | | | | | | | | | |
| Material <input type="checkbox"/> | | | | | | | | | | | |
| Setup <input type="checkbox"/> | | | | | | | | | | | |
| Other <input type="checkbox"/> | | | | | | | | | | | |
| Process <input type="checkbox"/> | | | | | | | | | | | |
| Supplier <input type="checkbox"/> | | | | | | | | | | | |
| Training <input type="checkbox"/> | | | | | | | | | | | |
| Unapproved <input type="checkbox"/> | | | | | | | | | | | |

| FAULT CATEGORY | | | | | | | | | |
|--------------------------|------------------------------|--------------------------|----------------|--------------------------|---------------------------------|--------------------------|----------------------|--------------------------|--------------------|
| Landing Gear | | | General | | | | | | |
| <input type="checkbox"/> | Bending | <input type="checkbox"/> | Bend | <input type="checkbox"/> | Grain | <input type="checkbox"/> | Ovalized | <input type="checkbox"/> | Pressure/Forced |
| <input type="checkbox"/> | Centre Not Concentric to O/S | <input type="checkbox"/> | BOM/Route | <input type="checkbox"/> | Hardware | <input type="checkbox"/> | Over/Under tolerance | <input type="checkbox"/> | Temperature/Cure |
| <input type="checkbox"/> | Cracks | <input type="checkbox"/> | Broken/Damaged | <input type="checkbox"/> | Inspection Incomplete | <input type="checkbox"/> | Part Incorrect | <input type="checkbox"/> | Weld |
| <input type="checkbox"/> | Crushed/Crimped | <input type="checkbox"/> | Burrs | <input type="checkbox"/> | Instructions Incomplete/Unclear | <input type="checkbox"/> | Part Lost/Missing | <input type="checkbox"/> | Wrong Stock Pulled |
| <input type="checkbox"/> | Cuffs | <input type="checkbox"/> | Contamination | <input type="checkbox"/> | Maintenance | <input type="checkbox"/> | Part Moved | | |
| <input type="checkbox"/> | Heat Treat | <input type="checkbox"/> | Countersink | <input type="checkbox"/> | Mislabeled | <input type="checkbox"/> | Positioned Wrong | <input type="checkbox"/> | Other |
| <input type="checkbox"/> | Inspection Strip in Tube | <input type="checkbox"/> | Cut Too Short | <input type="checkbox"/> | Misread | <input type="checkbox"/> | Power Loss/Surge | | |
| <input type="checkbox"/> | Ripples in Bend | <input type="checkbox"/> | Drill Holes | <input type="checkbox"/> | Offset | | | | |
| <input type="checkbox"/> | Torque Waves in Extrusion | <input type="checkbox"/> | Drawing | <input type="checkbox"/> | Out of Calibration | | | | |
| <input type="checkbox"/> | Turning Sequence | <input type="checkbox"/> | Finish | <input type="checkbox"/> | Out of Sequence | | | | |
| <input type="checkbox"/> | Wave/Twist in Tube | <input type="checkbox"/> | Folio | <input type="checkbox"/> | Outside Dimensions | | | | |

Work Order ID 88747

August-01-12 12:31:26 PM

88747

Accept

N900040100Setup Start ***NS1***

Item ID: D407-667-105

Revision ID:

Item Name: Crosstube Fwd

Start Date: 8/01/12 Start Qty: 1.00

Required Date: 8/06/12 Req'd Qty: 1.00

Reference: REWORK DSI 9544

Approvals: Process Plan: *W*

QC:

Date:

Tooling:

Date:

Date:

SPC (Y/N):

Date:

| Sequence ID/ Work Center ID | Operation Description |
|--------------------------------|--------------------------|
| Draw Nbr | Revision Nbr |
| D407-667-145 | Rev C (DEO) |
| DSI9565 | A |

Set Up/
Run Hours

| Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|---------|--------|--------------|---------------|---------------|------------------|----------------|
|---------|--------|--------------|---------------|---------------|------------------|----------------|

100

100

DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels as per PPP D407-667-105 CHG004

0.00

0.00

230

230

Crosstubes

Crosstubes

Crosstubes

Memo

PULL FROM STOCK:
1 X D407-667-105 B82729
(KEEP KIT IN BOX TO REPACKAGE AFTER REWORK)
REOWRK PER DSI 9544

0.00

0.00

| | | | |
|---|-------------------|--|-----------|
| DART Dart Aerospace Ltd. 1270 ABERDEEN ST. HAWKESBURY, ON, CANADA K6A 1K7 | | TC APPROVAL # 09-89 TEL: 1-813-632-5200 | |
| P/N | D407-667-105 | CHG | CHG004 |
| DESC. | Crosstube Fwd Hgh | STC | SH01-5 |
| LOT | B82729 | STC | SR01304NY |
| MODEL | Bell 407 | STC | |
| MADE IN CANADA | | D2729-1 | |

Stop

NR2

MW 12/08/07

AR 12-8-2

Non-Conformance Report

Printed on:

Friday, August 24, 2012

| Details | | | |
|--|---|--|--|
| Raised Date 8/16/2012 | Status Open | Owner | Number NCR12-1695 |
| Target Date 9/7/2012 | Standard | | Severity MAJOR |
| Source Quality Inspection | | Audit | |
| Raised By Person Downing, Eric | Raised Against (Department or Supplier) Manufacturing\Crosstube | | Fault Category General\Misread |
| Details i was brought a D206-664-017 kit to inspect after it was installed on QTY 10 cross tubes here at dart. when i was going to start checking the work order pick list to the IIN parts list i found that the qty's of parts were strange. when i started to read the DSI 9544-017 i then saw that the DSI calls for it to be installed in two places on the cross tubes. all the qty of cross tubes were only installed in 1 location. i then questioned the employee who was doing the install here and was informed that it was only installed in 1 location and that he thought it was strange that a grounding strap was installed in two locations on the same tube and took. the employee that was installing it was splitting up the qtys in the kits to do his install. all the dross tubes were inspected incorrectly.the kit was picked correctly having the right qtys of parts in it. | | | |
| Product D206-667\D206-667-101/201/103/103 | | | |
| Document | | Root Cause Lack of Attention | |
| Closed By | Closed Date | Resolution | |

| Corrective Action | | | |
|--|---------------------------------------|--------------------|------------------|
| Target Date 9/7/2012 | Owner Smith, Patrick Robert | Closed Date | Closed By |
| Details prevent the common practive of issuing out DSI's for reworks then asking them to be inspected after installs here at Dart. | | | |

| Actions | | | |
|--|----------------|--------------------|-----------------------|
| Number | Owner | Target Date | Completed Date |
| Details | | Response | |
| 4 | Lacelle, Linda | 8/31/2012 | |
| to stop the practices of handing out DSI for rework purposes and then asking them to be inspected after the installation | | | |
| 1 | Lacelle, Linda | 8/31/2012 | |
| pull all qtys of D206-667-101/103/105/107 that have D206-667-017 installed and issue a rework work order to have the clamps correctly installed to the correct qty | | | |

| | | | |
|--|-----------------------|-----------|--|
| 2 | Willems, Sian | 8/31/2012 | |
| issue a service bulletin or no charge to all the customers that have had D206-667-101/103/105/107 shipped to them missing part of the DSI9544-017/D206-667-017 installed incorrectly | | | |
| 3 | Smith, Patrick Robert | 8/31/2012 | |
| retrain all employees involved (Eric D, Andy S, & Matt M). and to Andy S to openly question as installation he has doubts about | | | |

Verification & Review

| Target Date | Owner | Closed Date | Closed By |
|-------------|-------|-------------|-----------|
| 8/20/2012 | | | |
| Details | | | |

Actions

| Number | Owner | Target Date | Completed Date |
|---------|-------|-------------|----------------|
| Details | | Response | |
| | | | |
| | | | |

